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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,926	08/08/2001	Amir Said	10018297-1	3679

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EXAMINER

FERRIS III, FRED O

ART UNIT

PAPER NUMBER

2128

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/924,926	Applicant(s) SAID, AMIR	
	Examiner Fred Ferris	Art Unit 2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-15 and 18-23 is/are rejected.
- 7) ☒ Claim(s) 4,5,16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. *Prosecution on the merits of this application is now reopened in view of the Panel Decision from Pre-Appeal Brief Review of 21 November 2005 and is responsive to applicant's amended claims filed 25 April 2005. The previous finality of 12 July 2005 is hereby withdrawn. Claims 1-23 remain pending in this application. Claims 1-3, 6-15, and 18-23 now stand rejected based on new grounds for rejection. Claims 4-5 and 16-17 remain objected to.*

Response to Arguments

2. *Applicant's arguments filed 11 October 2005 have been fully considered but are now moot based on new grounds for rejections. (Please see new 103(a) rejections below)*

Claim Interpretation

3. *The claimed limitations of independent claims 1, 13, and 23 are drawn to a method, apparatus, and computer code and include elements consisting of:*

- *identifying **at least one** predominate color in a digital image by:*
- *applying a detection rule to randomly-selected pixels in the image,*
- *(including) testing specific colors from randomly selected pixels to reduce the probability of at least one false-positive and false-negative outcome.*

*The examiner first notes that the recitation of “identifying **at least one** predominate color in a digital image” simply requires the identification of any number of predominate colors (e.g. one or more) in a digital image. Second, the recitation of “applying a detection rule to randomly-selected pixels in the image (**including**) testing specific colors from randomly selected pixels to reduce the probability of at least one false-positive and false-negative outcome” simply requires that specific digital image colors (e.g. RGB) are tested by a rule (e.g. an algorithm or hypothesis) from randomly selected pixels that includes performing a statistical analysis to reduce the probability of a false-positive and false-negative test outcome. The examiner notes that such statistical analysis techniques are well-known and commonly practiced to predict the likely outcome (e.g. forecasting and prediction) in digital image analysis for applications such as water marking digital images (See: Praum et al, Section 1.1) and digital medical image analysis (See: Drocourt et al, table 1), and more recently in applications such as internet data mining (See: A. Webb, 1.1.1), for example.*

Claim Objections

4. *Claims 3 and 15 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. In the case, the “rule” recited in the independent claims 1 and 13 is already understood to reduce (minimize) the probability of at least one false-positive and a false negative result. The*

rule is therefore not further limited by the same limitations as they appear in dependent claims 3 and 15.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. *Claims 1-3, 13-15, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,853,625 issued to Fitzpatrick et al in view of U.S. Patent 5,079,630 issued to Golin et al.*

Regarding independent claims 1, 13, and 23: Fitzpatrick teaches identifying at least one predominate color (CL7-L26-28) in a digital image (CL1-L34-35) inclusive of applying a detection rule (CL4-L64-66) to randomly-selected pixels (CL4-L57-58, 64-66) in the image (CL6-L26). (Examiners note: Fitzpatrick teaches identifying both

predominate and non-predominate colors (CL7-L27-26, Fig.4, Block 227) in the image.) Fitzpatrick further teaches the use of statistical analysis (CL5-L23) in the color detection process.

Fitzpatrick does not explicitly disclose reducing the probability of false-negative and false-positive results.

Drocourt specifically teaches minimizing the probability of obtaining false-positive and/or false-negative results (CL11-L58-63, Tab. II) and analyzing digital samples (CL2-L14-15) along a stored scan line (CL11-L51-54). (The examiner notes that while the scanned digital samples of Drocourt are derived from a scanning microscope, they nonetheless represent digital images contained in the disclosed PC system (Fig. 3-60) and include DSP processing detecting color discrimination (CL11-L36).

It would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the teachings of Fitzpatrick relating to identifying predominate colors of randomly selected pixels within a digital image, with the teachings of Drocourt relating to minimizing the probability of obtaining false-positive and/or false-negative results, to realize the elements of the claimed invention. An obvious motivation exists since minimizing the probability of obtaining false-positive and/or false-negative results achieves optimal performance in minimizing the error criterion (See: A. Webb, 1.1.2, 1.3, 1.5.1). Accordingly, a skilled artisan tasked with realizing a method and apparatus for identifying the predominate colors among sampled pixels in a digital image, and having access to the teachings of Fitzpatrick and Drocourt, would have

knowingly modified the teachings of Fitzpatrick with the teachings of Drocourt (or visa versa) to realize the elements of the present invention.

Per dependent claims 2 and 14: Fitzpatrick teaches randomly selected pixels in the image (CL4-L57-58, 64-66) while Drocourt teaches digital samples along a scan line (strip, CL11-L51-54) and would have knowingly been incorporated by a skilled artisan using the reasoning cited above.

Per dependent claims 3 and 15: The limitations of these claims are rendered obvious as being included in the limitations of the claims from which they depend. (Also see claim objection above)

6. Claims 6-12 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable in further view of US Patent 6,011,595 issued to Henderson.

Per dependent claims 6-12 and 18-22: These claims require creating a color list by sampling the image pixel colors and adding the color to the list and subsequently incrementing the list counter. These limitations are rendered obvious by Henderson's teaching of a color occurrence list (CL8-L34-61, CL9-L10, Figs. 3, 6) for identifying key colors in a digital image (CL2-L12-35, Figs 9). Further, the use of "lists" and "counters" is very well known in the art and would have knowingly been incorporated by a skilled artisan, using the reasoning previously cited above, as a method of maintaining a data structure of color image pixels. (See definition: "list" – a multi-element data structure allowing elements to be added and removed in any order, "counter" - used to keep count of elements, Microsoft Computer Dictionary, 1997)

Per dependent claims 11-12: These claims recite the use of a sorted list and hash table in maintaining the color occurrence list. Henderson teaches the use of tables (CL3-L17-21) and occurrence list (CL8-L34-61) that would necessarily be sorted (i.e. indexed) as previously noted above. Further, sorted lists and hash tables are also very well known in the art and would have knowingly been incorporated by a skilled artisan, using the reasoning previously cited above, as a method of maintaining a data structure list of color image pixels. (See definition: "sort" – to organize data in a particular order, "hash table" – mapping numerical values into values corresponding data in a structure such as a table, Microsoft Computer Dictionary, 1997)

Allowable Subject Matter

7. Claims 4-5 and 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims..

In particular, the prior art does not disclose the specific arrangement of elements of a method and apparatus relating to the probability of identifying a color having $r_c < r_a$ / $r_c > r_a$ as a predominant color, where r_c is number of pixels in a sample region having a specific color divided by the total number of pixels in the sample region, and r_a/r_d is an acceptable/desirable ratio as recited in dependent claims 4-5 and 16-17.

Conclusion

8. *The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Careful consideration should be given prior to applicant's response to this Office Action.*

"Statistical Pattern Recognition", A. Webb, Chapter 1, pp. 1-31, Oxford University Press, 1999 teaches statistical analysis in pattern recognition.

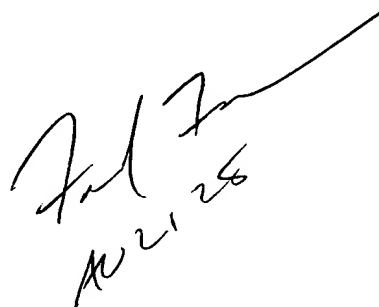
"Image Compression Using the Spatial-Orientation Tree", A. Said et al, IEEE 0-7803-1254-6/93, IEEE 1993 teaches lossy color image compression

"An Image Multiresolution representation for Lossless and Lossy Compression", A. Said et al, IEEE Transactions on Image Processing, Vol. 5, No. 9, September 1996 teaches lossy color image compression.

"A Genetic Approach to Color Image Compression", H. Feiel, ACM 0-89791-850-9, ACM 1997 teaches lossy color image compression.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 571-272-3778 and whose normal working hours are 8:30am to 5:00pm Monday to Friday. Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 571-272-3700. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean Homere can be reached at 571-272-3780. The Official Fax Number is: (703) 872-9306

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29 December, 2005

A handwritten signature in black ink, appearing to read 'Fred Ferris', with a long horizontal line extending from the end of the signature.